

Abstract of the Disclosure

A matching circuit that can protect a high frequency circuit from degradation in both output and efficiency, as well as from an increase of noise, changes of a frequency band even when an MIM insulation film thickness L around a subject transistor changes due to an unevenness among fabrication processes, thereby an electrical property of the transistor never changes among products, and provide a semiconductor device that employs such the matching circuit. An MIM capacity $C1$ is connected to an input side of the transistor so as to be combined with an input capacity of the transistor, thereby changes of the MIM insulation film thickness L can be eliminated automatically. The MIM capacity $C1$ changes contrarily to the changes of the MIM insulation film thickness L . That is, it is possible to realize a matching circuit that can absorb fluctuation of electric characteristics of the subject transistor automatically while the fluctuation of electric characteristics of the transistor are caused by changes of the MIM insulation film thickness L around the transistor to occur due to the unevenness among fabrication processes. In addition, in the case where the matching circuit is provided with a bias circuit, it is possible to obtain a high frequency circuit that can operate stably in a wide frequency band.